



universität  
wien

FAKULTÄT FÜR MATHEMATIK  
Dekan Univ.-Prof. Dr. Radu Ioan Boț

Einladung zur öffentlichen Defensio

**Tobias BERAN**

Thema der Dissertation

**Timelike curvature comparison in Lorentzian length spaces**

Abstract:

This thesis deals with constructions in the theory of Lorentzian (pre-)length spaces, properties of timelike curvature bounds and rigidity statements in that context. Lorentzian (pre-)length spaces are the Lorentzian analogue of metric and length spaces. First, hyperbolic angles are introduced and basic properties of them are discussed. Second, a globalization result for upper curvature bounds is given, akin to the Alexandrov patchwork, as well as a bound on the diameter for negative lower curvature bounds, mimicking the Bonnet-Myers theorem. Third, two rigidity results are proven for spaces with a lower curvature bound.

## **Prüfungssenat**

Univ.-Prof. Ulisse Stefanelli, PhD  
(Vorsitz, Universität Wien)

Univ.-Prof. Mag. Mag. Dr. Michael Kunzinger  
(Universität Wien)

Prof. Dr. Andrea Mondino  
(University of Oxford)

Prof. Dr. José Luis Flores  
(Universidad de Málaga)

## **Zeit und Ort**

Mittwoch, 10. Juli 2024, 14:00 Uhr

Online:

<https://univiennea.zoom.us/j/68313920244?pwd=1i5Xa3I0SP4I7s7n3b1MJQycfM7Yzb.1>

Meeting ID: 683 1392 0244

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